

Synthesis and Identification of Oxazipen ,Diazipene Compounds Via Peri cyclic Reactions

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ABSTRACT

This work involves synthesis of p-N,N-dimethylamino benzylideneareneamines (Schiff bases), Compounds[N₂-N₁₇]were synthesized by condensation of p-N,N-dimethylaminobenzaldehyde with different primary aromatic amines,which reacted with phthalic anhydride to produce other sixteen oxazepine compounds [N₃₄-N₄₉],which reacted whith various primary aromatic amines to produce five derivatives of diazepine compounds [N₃₅, N₃₈, N₄₁, N₄₆, N₄₈] .

Keywords: oxazepine, diazepine, cyclic compound.

INTRODUCTION

Pericyclic reactions involve bond changes in a circle of atoms . In Pericyclic reactions , bonds are made or broken in a concerted cyclic transition state (T.S). This means that there are no intermediates formed in the course of the reaction ⁽¹⁻³⁾. Pericyclic reactions represent an important class of concerted (single step) process involving pi-systems; a concert rearrangement of the electrons takes place which causes sigma and pi-bonds to simultaneously break and form, the fact that the reactions are concerted gives fine stereo chemical control of the product pericyclic reactivity can be understood in terms of frontier molecular orbital (FMO) theory , it can be

predicted using the Woodward-Hoffman rules.

Oxazepam and Diazepam (valium) are a class of drugs used as relaxants , minor tranquilizers , hypnotics and muscle relaxant because it is often seen in fortensic and clinical cases ⁽⁴⁻¹³⁾.

EXPERIMENTAL

- All chemicals used were supplied from Merck and BDH-chemical company.

All measurements were carried out by

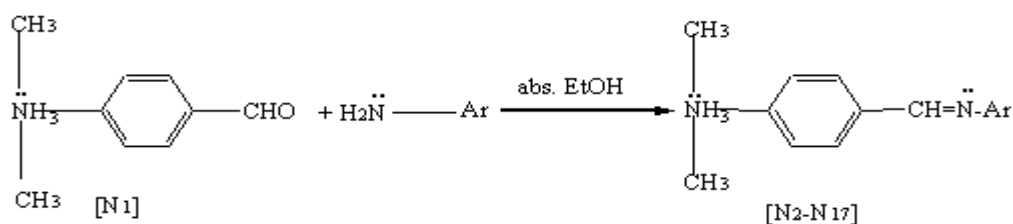
- Melting points: Electrothermal 9300, melting point Engineering LTD,U.K
- FI-IR spectra : Fourier transform infrared shimadzu (8300) (FI-IR), Kbr disc was performed by Co. S. Q. Iraq.

- Elemental Analysis (C. H. N), HNMR spectra .

SYNTHETIC METHODS

Synthesis of p-N, N-dimethyl amine benzylidene arene amino (Schiff's bases) [N₂-N₁₇]

General procedure^(12,13)

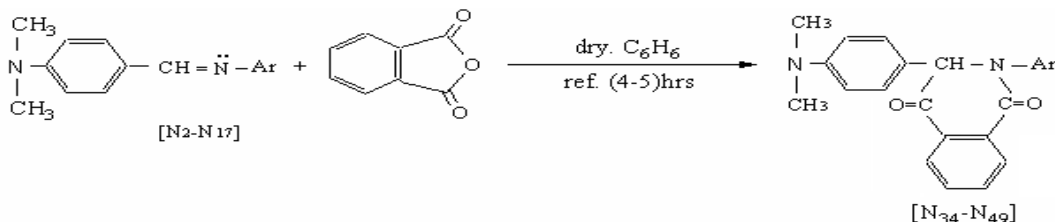


A mixture of equimolar amounts (0.05 mole, 6.30 ml) of p-N, N-dimethyl amino benzaldehyde [N₁] and primary aromatic amine dissolved in (50 ml) of absolute ethanol with some drops of acetic acid was refluxed for (3 hrs) . The reaction mixture was then allowed to cool to room temperature and solid product was filtered and recrystallized from ethanol to give colored crystals from compounds[N₂-N₁₇].

Synthesis of 2-(p-N,N-dimethyl amino benzyl)-3-aryl-2,3-dihydrobenz[1,2-e][1,3]-oxazepine-4-7-diones. (Oxazepine derivatives) [N₃₄-N₄₉].

General procedure⁽¹²⁾

A mixture of equimolar amounts



(0.02 mole) of schiff's bases [N₂-N₁₇] and phthalic anhydride in dry benzene was refluxed for (5-6 hrs), the solvent was removed and the resulting colored crystalline solid was recrystallized from dry 1,4-dioxane to give the title products of compounds [N₃₄-N₄₉].

Synthesis of 1-(aryl)-2-(p-N, Ndimethylaminobenzyl)-3-aryl1,2,3-trihydrobenzo [1,2-e][1,3]-diazepine-4,7-diones... Diazepine derivatives [N₅₀-N₅₄]

General procedure⁽¹²⁾

A mixture of equimolar amounts (0.02 mole) of oxazepine derivatives

[N₃₅,N₃₈,N₄₁,N₄₆,N₄₈] with selected primary aromatic amines in (50 ml) of dry benzene was refluxed (5-6 hrs), the solvent was removed and the resulting colored crystalline solid was re-crystallized from ethanol to yield diazepine compounds [N₅₀-N₅₄]:

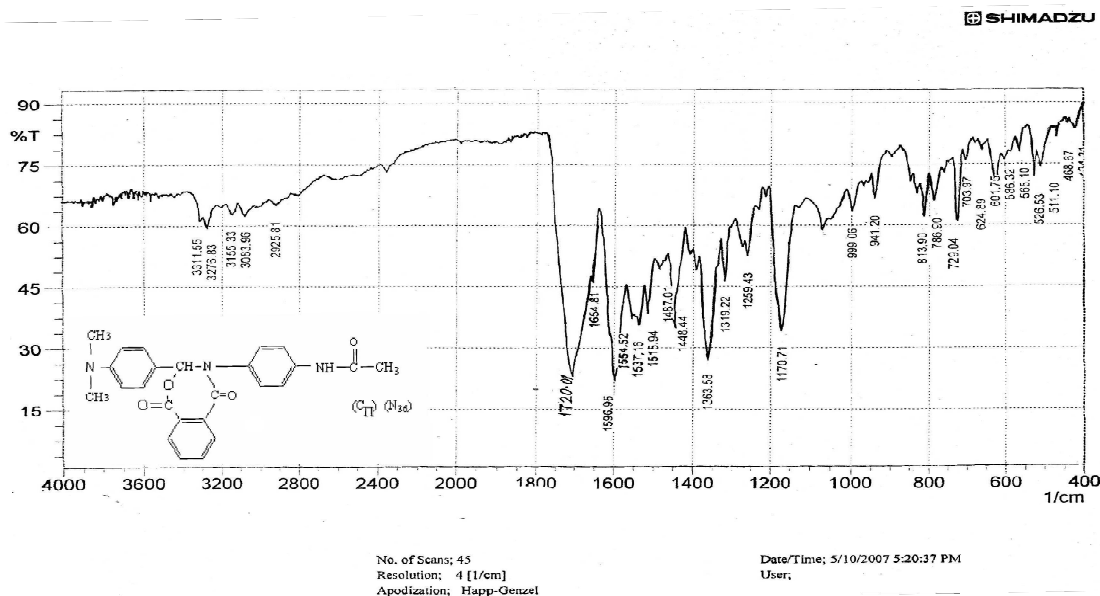
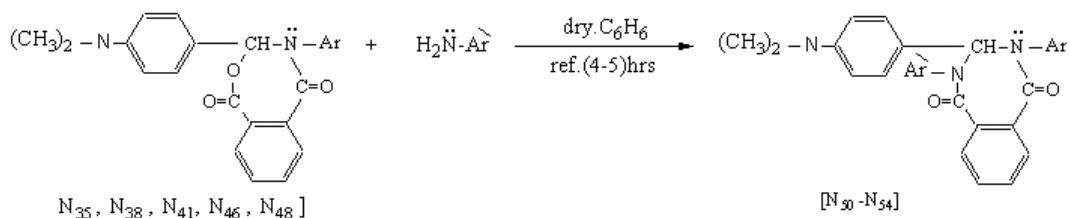


Figure (3.11) FT-IR spectrum of compound $\text{[N}_{36}\text{]}$

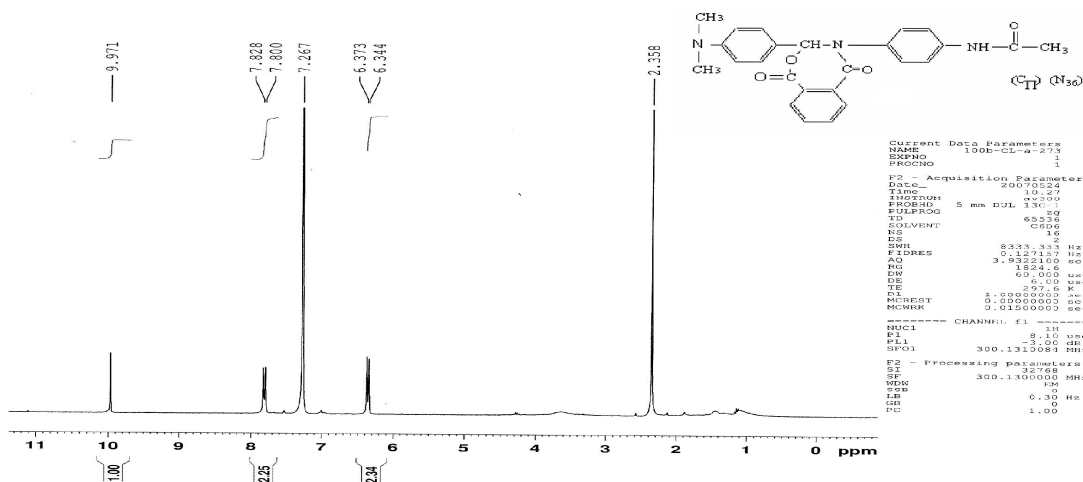
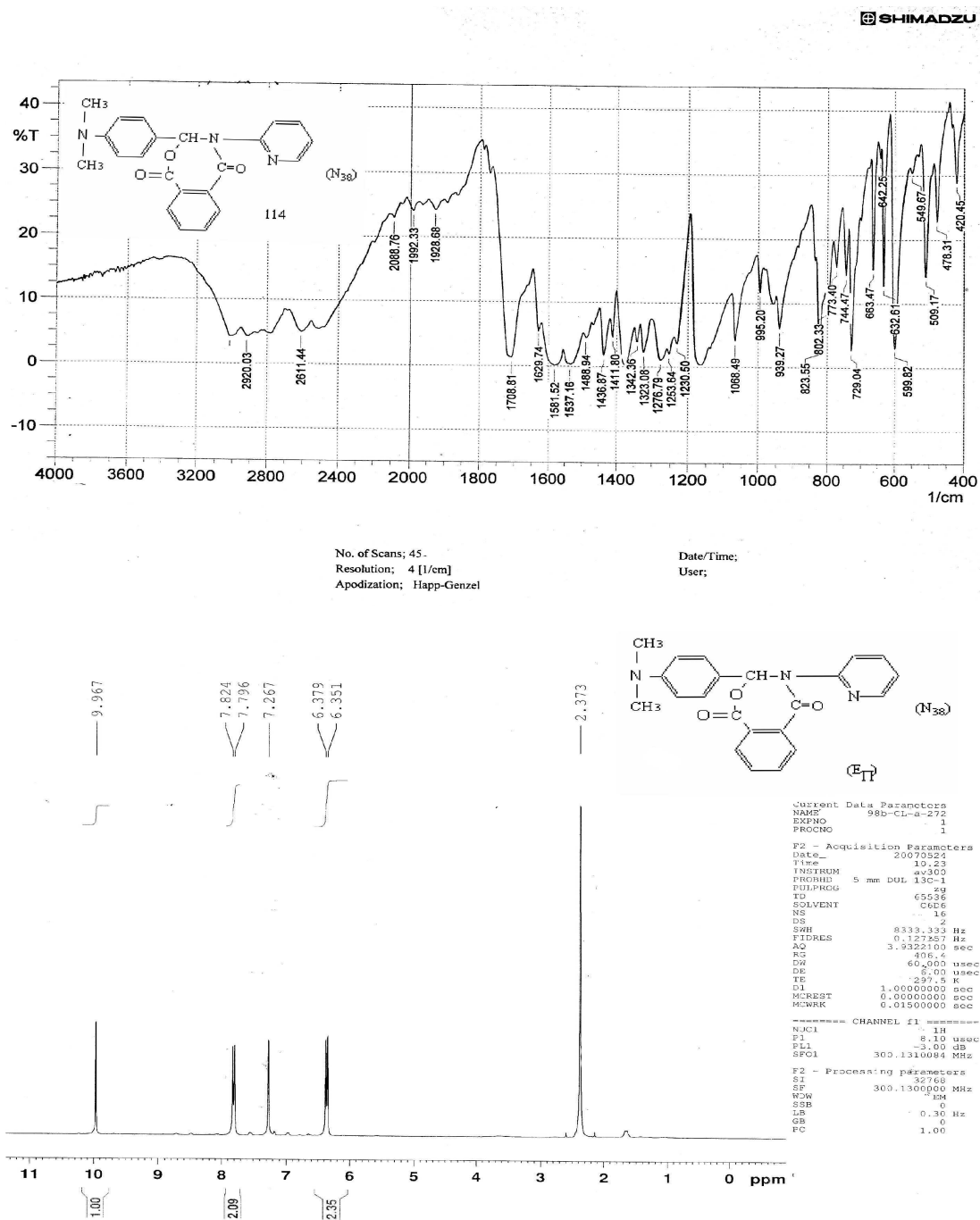


Figure (3.12) $^1\text{H-NMR}$ spectrum of compound $\text{[N}_{36}\text{]}$

Figure (3.14) H-NMR spectrum of compound [N₃₈]

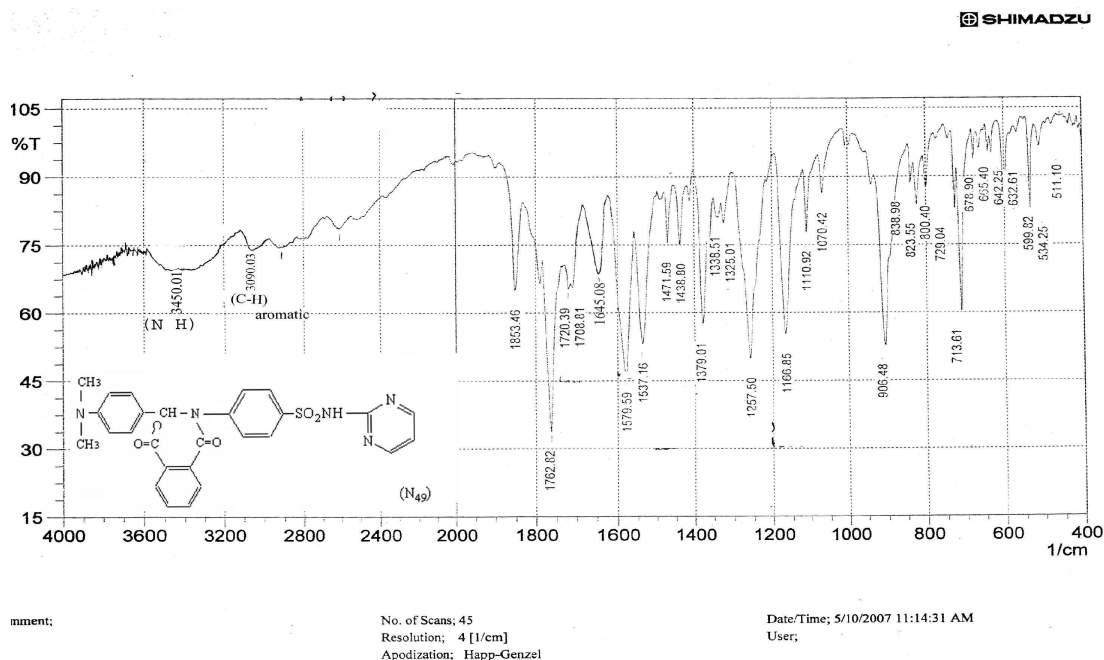


Figure (5) H-NMR spectrum of compound [N₄₇]

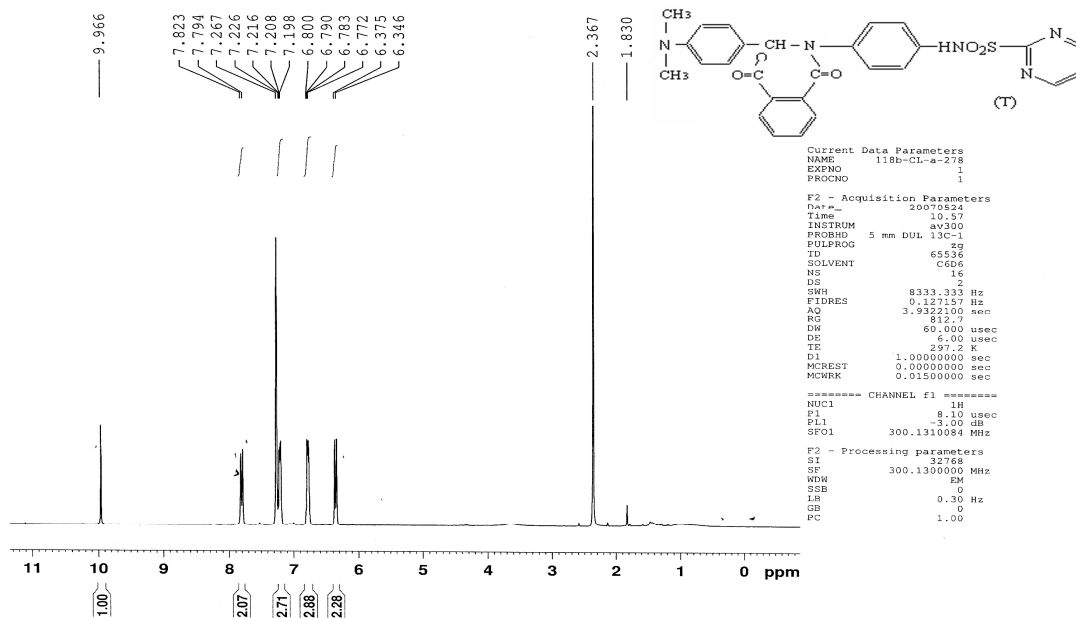


Figure (3.19) FT-IR spectrum of compound [N₄₉]

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